Architecture and Construction

PATHWAY: Design/Pre-Construction

Pathway Topic: Academics

Pathway KS Statement: Employ basic methods of data collection and analysis to provide information for projects.

Performance Element: Access research methods available to formulate project planning and problem-solving.

Measurement Criteria: Select and employ proper method for a given project.

Performance Element: Provide appropriate precedents for development of a project.

Measurement Criteria: Articulate logical rationale for use of chosen precedents.

Pathway Topic: Communications

Pathway KS Statement: Work with potential clients.

Performance Element: Give a speech to explain a concept.

Measurement Criteria: Show project plans for visual impact.

Measurement Criteria: Evaluate customer comprehension.

Performance Element: Facilitate a variety of clients and agencies.

Measurement Criteria: Identify types of client/agency needs.

Measurement Criteria: Mediate diversity to meet needs.

Pathway Topic: Systems

Pathway KS Statement: Integrate structural systems, environmental systems, safety systems, building envelope systems and building service systems to design modern buildings.

Performance Element: Assess building systems and their interrelationships to develop design criteria.

Measurement Criteria: Select and integrate building systems.

Pathway KS Statement: Review traditional project phases and various roles within them to plan for and implement phases within a project.

Performance Element: Relate traditional project phases and the various roles within them to a current project.

Measurement Criteria: Work through project phases.

Pathway Topic: Safety, Health, and Environmental

Pathway KS Statement: Apply the basic principles of environmental impact to enhance project acceptance and quality.

Performance Element: Evaluate and align sustainable design elements to add value to the project.

Measurement Criteria: Integrate sustainable elements into project designs.

Pathway KS Statement: Apply design requirements to accommodate people with varying physical abilities.

Performance Element: Study the Americans with Disabilities Act in order to build compliance into project designs.

Measurement Criteria: Integrate Americans with Disabilities Act compliance into project designs.

Pathway Topic: Leadership and Teamwork
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Pathway KS Statement: Appreciate the diversity of needs, values and social patterns in project design.

Performance Element: Identify Western, non-Western, national and regional traditions and heritage to express diversity in project design as required.

Measurement Criteria: Apply cultural traditions and diversity to project design.

Pathway Topic: Technical

Pathway KS Statement: Use drawings and computer-generated plans to develop a technical set of drawings.

Performance Element: Identify client's needs and wants to develop criteria for a set of technical drawings.

Measurement Criteria: Develop a set of technical drawings meeting the client's specifications.

Pathway KS Statement: Employ appropriate representational media to convey essential formal elements.

Performance Element: Use two- and three-dimensional drawings to convey graphic information.

Measurement Criteria: Employ basic drawing skills.
Measurement Criteria: Show three-dimensions in a two-dimensional drawing.

Performance Element: Reference drawings and sketches to build models.

Measurement Criteria: Employ basic model building techniques.
Measurement Criteria: Verify accuracy of model based on drawings and sketches used.

Performance Element: Use appropriate computer technology to convey graphic information.

Measurement Criteria: Employ basic computer modeling techniques.

Pathway KS Statement: Study principles, conventions, standards, applications and restrictions pertaining to the manufacture and use of construction materials, components and assemblies to incorporate into project design.

Performance Element: Evaluate and select building materials and assemblies to meet project specifications.

Measurement Criteria: Develop and communicate an assigned building assembly.

Performance Element: Use appropriate combinations of building materials and components to satisfy the requirements of building programs.

Measurement Criteria: Select the more appropriate building assembly.

Pathway KS Statement: Apply basic organizational, spatial, structural and constructional principles to the design of interior and exterior space.

Performance Element: Develop design alternatives to address a given problem.

Measurement Criteria: Evaluate and select the most appropriate solution.
PATHWAY: Construction

Pathway Topic: Communications

Pathway KS Statement: Recognize universal signs and symbols such as colors, flags, stakes and hand signals to function safely in the workplace.

Performance Element: Identify universal signs and symbols to apply to given workplace situations.

Measurement Criteria: Explain functions of signs and symbols.
Measurement Criteria: Work safely using signs and symbols.
Measurement Criteria: Inspect all signs and symbols for safe and proper use.
Measurement Criteria: Use proper signs and signals for the work area.
Measurement Criteria: Respond appropriately to signs and signals.

Pathway Topic: Technical Skills

Pathway KS Statement: Examine building systems and components to evaluate their usefulness to a project.

Performance Element: Identify building systems needed to complete a construction project.

Measurement Criteria: List all building systems involved in a project.
Measurement Criteria: Describe the purpose of each system.

Performance Element: Identify components of building systems needed to complete a construction project.

Measurement Criteria: List all components of the involved building system.
Measurement Criteria: Describe the function of each component.

Performance Element: Incorporate appropriate building systems into a construction project.

Measurement Criteria: Use appropriate components for the building systems required.
PATHWAY: Maintenance/Operations

Pathway Topic: Communications

**Pathway KS Statement:** Recognize universal signs and symbols such as colors, flags, stakes and hand signals to function safely in the workplace.

- Performance Element: Identify universal signs and symbols to apply to given workplace situations.
- **Measurement Criteria:** Explain functions of signs and symbols.
- **Measurement Criteria:** Work safely using signs and symbols.
- **Measurement Criteria:** Inspect all signs and symbols for safe and proper use.
- **Measurement Criteria:** Use proper signs and signals for the work area.

Pathway Topic: Problem Solving and Critical Thinking

**Pathway KS Statement:** Use troubleshooting procedures to solve a maintenance problem.

- Performance Element: Troubleshoot to isolate a maintenance problem.
- **Measurement Criteria:** Identify the problem using at least one appropriate troubleshooting method.

- Performance Element: Select a solution to address the maintenance problem.
- **Measurement Criteria:** Identify strategies for implementing the solution.
- **Measurement Criteria:** Identify tools and equipment needed.
- **Measurement Criteria:** Use tools and equipment safely, effectively and efficiently.
- **Measurement Criteria:** Test and verify that the problem is solved.

Pathway Topic: Technical

**Pathway KS Statement:** Apply construction skills to restoration of existing structures.

- Performance Element: Evaluate restoration problems to plan solutions.
- **Measurement Criteria:** Identify strategies for implementing solutions.

- Performance Element: Determine materials required to complete restoration.
- **Measurement Criteria:** Match materials selected to the restoration specifications.

- Performance Element: Implement restoration strategies to produce restored structure.
- **Measurement Criteria:** Restore structure to match original structure within specifications.

**Pathway KS Statement:** Evaluate the work required to repair existing structures.

- Performance Element: Use evaluation strategies to assess the extent and condition of any problems.
- **Measurement Criteria:** Identify potential sources of problems.
- **Measurement Criteria:** Select the most probable cause of each problem.

- Performance Element: Identify tools, materials and human resources needed to complete the repair work.
- **Measurement Criteria:** Select tools and materials that will repair the problem.
Pathway Topic: Technical

Employ individuals with the appropriate expertise to complete the repair work.

Performance Element: Complete the repair work to restore project to the original condition.

Measurement Criteria: Use tools and materials safely, effectively and efficiently.

Measurement Criteria: Test and verify that the repair is complete.

Pathway KS Statement: Practice preventative maintenance to service existing structures.

Performance Element: Develop a checklist to track preventative maintenance.

Measurement Criteria: Read and interpret technical manuals.

Measurement Criteria: Identify preventative maintenance needs for a variety of conditions.

Measurement Criteria: List maintenance needs for a variety of equipment, systems, and structures.

Performance Element: Identify tools and materials needed to perform preventative maintenance.

Measurement Criteria: Select and use tools and materials safely, effectively, and efficiently.

Performance Element: Establish time-based schedules to perform preventative maintenance.

Measurement Criteria: Follow a maintenance schedule.

Measurement Criteria: Complete and maintain preventative maintenance records.

Pathway KS Statement: Maintain and use operational systems to achieve smooth operation of facilities.

Performance Element: Maintain operations systems such as fire prevention, HVAC, security/alarm, environmental and process systems to meet safety and customer requirements.

Measurement Criteria: Read and interpret technical manuals.

Measurement Criteria: Apply information from technical manuals.